

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended)

~~A method, comprising:~~ A method for reporting links that are in a logical channel (LCN) exhaustion state where a maximum permissible number of connections has been reached, the method comprising:

observing by a node in a Private Network Node Interface (PNNI) Asynchronous Transfer Mode (ATM) network that a link is in the LCN exhaustion state;

issuing a PNNI Topology State Packet (PTSP) from the node for the link that is in the LCN exhaustion state, the PTSP including a PNNI Topology State Packet Element (PTSE) having information about the link, from a node, said PTSE information describing a link within an Asynchronous Transfer Mode (ATM) Private Network Node Interface (PNNI) network, said link being within a logical channel (LCN) exhaustion state, said PTSE information further comprising:

a) a per priority level breakdown of bandwidth reserved on said link and whether or not a connection exists on said ~~link~~, link for each priority level;

b) a per service category breakdown of over-subscription factors, or, information from which a per service category breakdown of over-subscription factors can be determined, ~~and~~ actual available capacity on said link for each of said service

categories, and an advertised available capacity value set equal to zero for each of said service categories; and

c) an indication of the actual maximum capacity of said link and an advertised maximum capacity value set equal to zero.

2. (Original)

The method of claim 1 wherein said PTSE information is a Horizontal Link PTSE information type.

3. (Previously Presented)

The method of claim 1 wherein said PTSE information further comprises System Capabilities Information Group (SIG) information containing:

said per priority level breakdown of bandwidth reserved on said link

and

said per service category breakdown of over-subscription factors, or, said information from which a per service category breakdown of over-subscription factors can be determined.

4. (Previously Presented)

The method of claim 1 wherein one of said service categories is a continuous bit rate (CBR) service.

5. (Previously Presented)

The method of claim 1 wherein one of said service categories is a variable bit rate (VBR) service.

6. (Previously Presented)

The method of claim 1 wherein one of said service categories is an available bit rate (ABR) service.

7.-8. (Cancelled)

9. (Currently Amended)

A method ~~to assist in~~ for deciding ~~whether or not a~~ if an Asynchronous Transfer Mode (ATM) Private Network Node Interface (PNNI) network link is able to sustain a new connection, said method comprising:

determining if said link is within a logical channel (LCN) exhaustion state;

determining if said new connection requests more bandwidth than is advertised as being available upon said link for said new connection's service category;

if said link is not within ~~a logical channel (LCN)~~ said LCN exhaustion state and said new connection requests more bandwidth than is advertised as being available upon said link for said new connection's service category, regarding the bandwidth available for said new connection as a sum, said sum comprising addition of:

1) said advertised available bandwidth and

- 2) the total bandwidth reserved on said link for connections having lower priority than said new connection enhanced by over-subscription for said service category.

10. (Original)

The method of claim 9 further comprising deciding that said link is not able to sustain said new connection because said bandwidth requested by said new connection exceeds said sum.

11. (Original)

The method of claim 9 further comprising deciding that said link is able to sustain said new connection because said sum exceeds said bandwidth requested by said new connection.

12. (Original)

The method of claim 9 further comprising deciding that said link is not able to sustain a second new connection because said second new connection requests more bandwidth than an advertised maximum bandwidth of said link.

13. (Currently Amended)

The method of claim 9 further comprising:

if said link is within ~~an LCN~~ said LCN exhaustion state and a second new connection requests more bandwidth than is indicated via System Capabilities Information Group (SIG) information as being available upon said link for said second new connection's service category, regarding the bandwidth available for said second new connection as a sum, said sum comprising addition of:

- 1) said bandwidth indicated via SIG information and

2) the total bandwidth reserved on said link for connections having lower priority than said second new connection enhanced by over-subscription for said second connection's service category.

14. (Currently Amended)

The method of ~~claim 13~~ claim 9 further comprising detecting said LCN exhaustion state by recognizing that:

- 1) said advertised available bandwidth has been set equal to zero; and,
- 2) an advertised maximum bandwidth of said link has been set equal to zero.

15. (Original)

The method of claim 13 further comprising deciding that said link is not able to sustain said second new connection because said bandwidth requested by said second new connection exceeds said sum.

16. (Original)

The method of claim 13 further comprising deciding that said link is able to sustain said second new connection because said sum exceeds said bandwidth requested by said second new connection and because there exists a pre-established connection on said link having a lower priority than said second new connection, said pre-established connection being indicated via SIG information describing a per priority level breakdown of whether or not a pre-established connection exists on said link.

17. (Original)

The method of claim 13 further comprising deciding that said link is not able to sustain said second new connection even though said sum exceeds said bandwidth requested by said second new connection because there does not exist a pre-established connection on said link having a lower priority than said second new connection, said lack of a pre-established connection being indicated via SIG information describing a per priority level breakdown of whether or not a pre-established connection exists on said link.

18. (Currently Amended)

~~A method,~~ method for deciding if a link in a Private Network Node Interface (PNNI)
Asynchronous Transfer Mode (ATM) network is able to sustain a new connection, said
method comprising:

~~a) updating an understanding of an Asynchronous Transfer Mode (ATM) Private~~
~~Network Node Interface (PNNI) network after reception of PNNI Topology State Packet~~
~~(PTSE) information, said understanding including an understanding of a link within said~~
~~network, receiving a PNNI Topology State Packet (PTSP) for said link, the PTSP~~
including a PNNI Topology State Element (PTSE) having information about said link,
said PTSE information having System Capabilities Information Group (SIG) information
that comprises:

- ~~1) a first a~~ per priority level breakdown of bandwidth reserved on said link;
- ~~2) a first a~~ per service category breakdown of over-subscription factors; and,
storing said PTSE information about said link; and

~~b) deciding~~ deciding whether said link is able to sustain a new connection, said ~~deciding~~ comprising, connection if said new connection's bandwidth exceeds an available bandwidth for said new connection found within said PTSE information for said link by adding information, ~~regarding the bandwidth available for said new connection as a sum,~~ said sum comprising addition the of:

1) ~~said available bandwidth and~~

2) ~~the a~~ total bandwidth reserved on said link for connections having lower priority than said new connection enhanced by ~~over-subscription calculated with a said~~ over-subscription factor for said service ~~category,~~ category to said available bandwidth.

19. (Currently Amended)

The method of claim 18 wherein said available bandwidth is:

1) ~~advertised-received~~ according to a technique specified by a PNNI standard if said link is not in a logical channel (LCN) exhaustion state; or,

2) ~~broadcasted within-received as part of said~~ SIG information if said link is within an LCN exhaustion state.

20. (Original)

The method of claim 18 further comprising deciding that said link is not able to sustain said new connection because said bandwidth requested by said new connection exceeds said sum.

21. (Original)

The method of claim 18 further comprising deciding that said link is able to sustain said new connection because said sum exceeds said bandwidth requested by said new connection.

22. (Original)

The method of claim 18 further comprising deciding that said link is able to sustain said new connection because said sum exceeds said bandwidth requested by said new connection and because there exists a pre-established connection on said link having a lower priority than said new connection, said pre-established connection being indicated via SIG information describing a per priority level breakdown of whether or not a pre-established connection exists on said link, said link in an LCN exhaustion state.

23. (Original)

The method of claim 18 further comprising deciding that said link is not able to sustain said new connection even though said sum exceeds said bandwidth requested by said new connection because there does not exist a pre-established connection on said link having a lower priority than said new connection, said lack of a pre-established connection being indicated via SIG information describing a per priority level breakdown of whether or not a pre-established connection exists on said link, said link in an LCN exhaustion state.

24. (Currently Amended)

A machine readable medium having stored thereon a sequence of instructions which when executed by a processor cause said processor to perform a ~~method~~ method for reporting links

that are in a logical channel (LCN) exhaustion state where a maximum permissible number of connections has been reached, said method comprising:

~~deciding when observing that~~ a link within an Asynchronous Transfer Mode (ATM) Private Network Node Interface (PNNI) network is ~~within a logical channel (LCN) in the~~ LCN exhaustion state; and,

~~preparing issuing a PNNI Topology State Packet (PTSP) for the link that is in the LCN exhaustion state, the PTSP including a PNNI Topology State Packet Element (PTSE) having information about the link, to be issued from a node, said PTSE information having information describing said link, said~~ PTSE information further comprising:

- a) a per priority level breakdown of bandwidth reserved on said link and whether or not a connection exists on said ~~link~~; link for each priority level;
- b) a per service category breakdown of over-subscription factors, or, information from which a per service category breakdown of over-subscription factors can be determined, ~~and~~ actual available capacity on said link for each of said service categories, and an advertised available capacity value set equal to zero for each of said service categories; and
- c) an indication of the actual maximum capacity of said link and an advertised maximum capacity value set equal to zero.

25. (Original)

The machine readable medium of claim 24 wherein said PTSE information is a Horizontal Link PTSE information type.

26. (Previously Presented)

The machine readable medium of claim 24 wherein said PTSE information further comprises System Capabilities Information Group (SIG) information containing:

said per priority level breakdown of bandwidth reserved on said link

and

said per service category breakdown of over-subscription factors, or, said information from which a per service category breakdown of over-subscription factors can be determined..

27. (Previously Presented)

The machine readable medium of claim 24 wherein one of said service categories is a continuous bit rate (CBR) service.

28. (Previously Presented)

The machine readable medium of claim 24 wherein one of said service categories is a variable bit rate (VBR) service.

29. (Previously Presented)

The machine readable medium of claim 24 wherein one of said service categories is an available bit rate (ABR) service.

30.-31. (Cancelled)

32. (Currently Amended)

A machine readable medium having a sequence of instructions which when executed cause a processor to perform a method ~~to assist in for deciding whether or not if~~ an Asynchronous Transfer Mode (ATM) Private Network Node Interface (PNNI) network link is able to sustain a new connection, said method comprising:

determining if said link is within a logical channel (LCN) exhaustion state;

determining if said new connection requests more bandwidth than is advertised as being available upon said link for said new connection's service category;

if said link is not within ~~a logical channel (LCN)~~ said LCN exhaustion state and said new connection requests more bandwidth than is advertised as being available upon said link for said new connection's service category, regarding the bandwidth available for said new connection as a sum, said sum comprising addition of:

- 1) said advertised available bandwidth and
- 2) the total bandwidth reserved on said link for connections having lower priority than said new connection enhanced by over-subscription for said service category.

33. (Original)

The machine readable medium of claim 32 wherein said method further comprises deciding that said link is not able to sustain said new connection because said bandwidth requested by said new connection exceeds said sum.

34. (Original)

The machine readable medium of claim 32 wherein said method further comprises deciding that said link is able to sustain said new connection because said sum exceeds said bandwidth requested by said new connection.

35. (Original)

The machine readable medium of claim 32 wherein said method further comprises deciding that said link is not able to sustain a second new connection because said second new connection requests more bandwidth than an advertised maximum bandwidth of said link.

36. (Previously Presented)

The machine readable medium of claim 32 wherein said method further comprises:

if said link is within said LCN exhaustion state and a second new connection requests more bandwidth than is indicated via System Capabilities Information Group (SIG) information as being available upon said link for said second new connection's service category, regarding the bandwidth available for said second new connection as a sum, said sum comprising addition of:

- 1) said bandwidth indicated via SIG information and
- 2) the total bandwidth reserved on said link for connections having lower priority than said second new connection enhanced by over-subscription for said second connection's service category.

37. (Currently Amended)

The machine readable medium of ~~claim 36~~ claim 32 wherein said method further comprises detecting said LCN exhaustion state by recognizing that:

- 1) said advertised available bandwidth has been set equal to zero; and,
- 2) an advertised maximum bandwidth of said link has been set equal to zero.

38. (Original)

The machine readable medium of claim 36 wherein said method further comprises deciding that said link is not able to sustain said second new connection because said bandwidth requested by said second new connection exceeds said sum.

39. (Original)

The machine readable medium of claim 36 wherein said method further comprises deciding that said link is able to sustain said second new connection because said sum exceeds said bandwidth requested by said second new connection and because there exists a pre-established connection on said link having a lower priority than said second new connection, said pre-established connection being indicated via SIG information describing a per priority level breakdown of whether or not a pre-established connection exists on said link.

40. (Original)

The machine readable medium of claim 36 wherein said method further comprises deciding that said link is not able to sustain said second new connection even though said sum exceeds said bandwidth requested by said second new connection because there does not exist a pre-

established connection on said link having a lower priority than said second new connection, said lack of a pre-established connection being indicated via SIG information describing a per priority level breakdown of whether or not a pre-established connection exists on said link.

41. (Currently Amended)

A machine readable medium having a sequence of instructions which when executed by a processor cause said processor to perform a ~~method~~, method for deciding if a link in a Private Network Node Interface (PNNI) Asynchronous Transfer Mode (ATM) network is able to sustain a new connection, said method comprising:

~~a) updating an understanding of an Asynchronous Transfer Mode (ATM) Private Network Node Interface (PNNI) network after reception of PNNI Topology State Packet (PTSE) information, said understanding including an understanding of a link within said network, receiving a PNNI Topology State Packet (PTSP) for said link, the PTSP including a PNNI Topology State Element (PTSE) having information about said link,~~
said PTSE information having System Capabilities Information Group (SIG) information that comprises:

- ~~1) a first~~ a per priority level breakdown of bandwidth reserved on said link;
- ~~2) a first~~ a per service category breakdown of over-subscription factors; and,
- ~~b) deciding~~ deciding whether said link is able to sustain a new connection, said deciding comprising connection if said new connection's bandwidth exceeds an available bandwidth for said new connection found within said PTSE information for said link by

~~adding information, regarding the bandwidth available for said new connection as a sum,
said sum comprising addition the of:~~

~~1) said available bandwidth and~~

~~2) the a total bandwidth reserved on said link for connections having lower priority
than said new connection enhanced by over-subscription calculated with a said over-
subscription factor for said service category-category to said available bandwidth.~~

42. (Currently Amended)

The machine readable medium of claim 41 wherein said available bandwidth is:

1) ~~advertised~~ received according to a technique specified by a PNNI standard if said link
is not in a logical channel (LCN) exhaustion state; or,

2) ~~broadcasted within~~ received as part of said SIG information if said link is within an
LCN exhaustion state.

43. (Original)

The machine readable medium of claim 41 wherein said method further comprises deciding
that said link is not able to sustain said new connection because said bandwidth requested by
said new connection exceeds said sum.

44. (Original)

The machine readable medium of claim 41 wherein said method further comprises deciding
that said link is able to sustain said new connection because said sum exceeds said bandwidth
requested by said new connection.

45. (Original)

The machine readable medium of claim 41 wherein said method further comprises deciding that said link is able to sustain said new connection because said sum exceeds said bandwidth requested by said new connection and because there exists a pre-established connection on said link having a lower priority than said new connection, said pre-established connection being indicated via SIG information describing a per priority level breakdown of whether or not a pre-established connection exists on said link, said link in an LCN exhaustion state.

46. (Original)

The machine readable medium of claim 41 wherein said method further comprises deciding that said link is not able to sustain said new connection even though said sum exceeds said bandwidth requested by said new connection because there does not exist a pre-established connection on said link having a lower priority than said new connection, said lack of a pre-established connection being indicated via SIG information describing a per priority level breakdown of whether or not a pre-established connection exists on said link, said link in an LCN exhaustion state.